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ABSTRACT

This teaching guide is part of a series of materials developed, with input from adult learners, to aid adult literacy teachers in incorporating health education into the curriculum. This guide aims to help teachers to provide adult students with information about good fitness habits and positive health behaviors that will substantially reduce the risk of poor overall health. The guide provides the goals and objectives of the course; it is organized in six sections that cover the following topics: (1) background information (exercise and good health, obesity in children, and aerobic versus anaerobic activity); (2) what works (principles of exercise, components of fitness, tailoring the program, phases of fitness, weight control, and physiological differences between men and women); (3) special cases (pregnancy, senior citizens, larger persons); (4) getting started (motivation, doing it right, how not to spend lots of money); (5) safety (preventing injury while exercising, environmental considerations); and (6) promoting the value of the program. The guide includes sample lessons, handouts, a list of 15 resources, a glossary of key terms, keys to handouts, and a bibliography listing 15 references. (KC)

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HEALTH PROMOTION FOR ADULT LITERACY STUDENTS

An Empowering Approach.

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Exercise: Benefits for Body and Mind

TEACHER'S GUIDE

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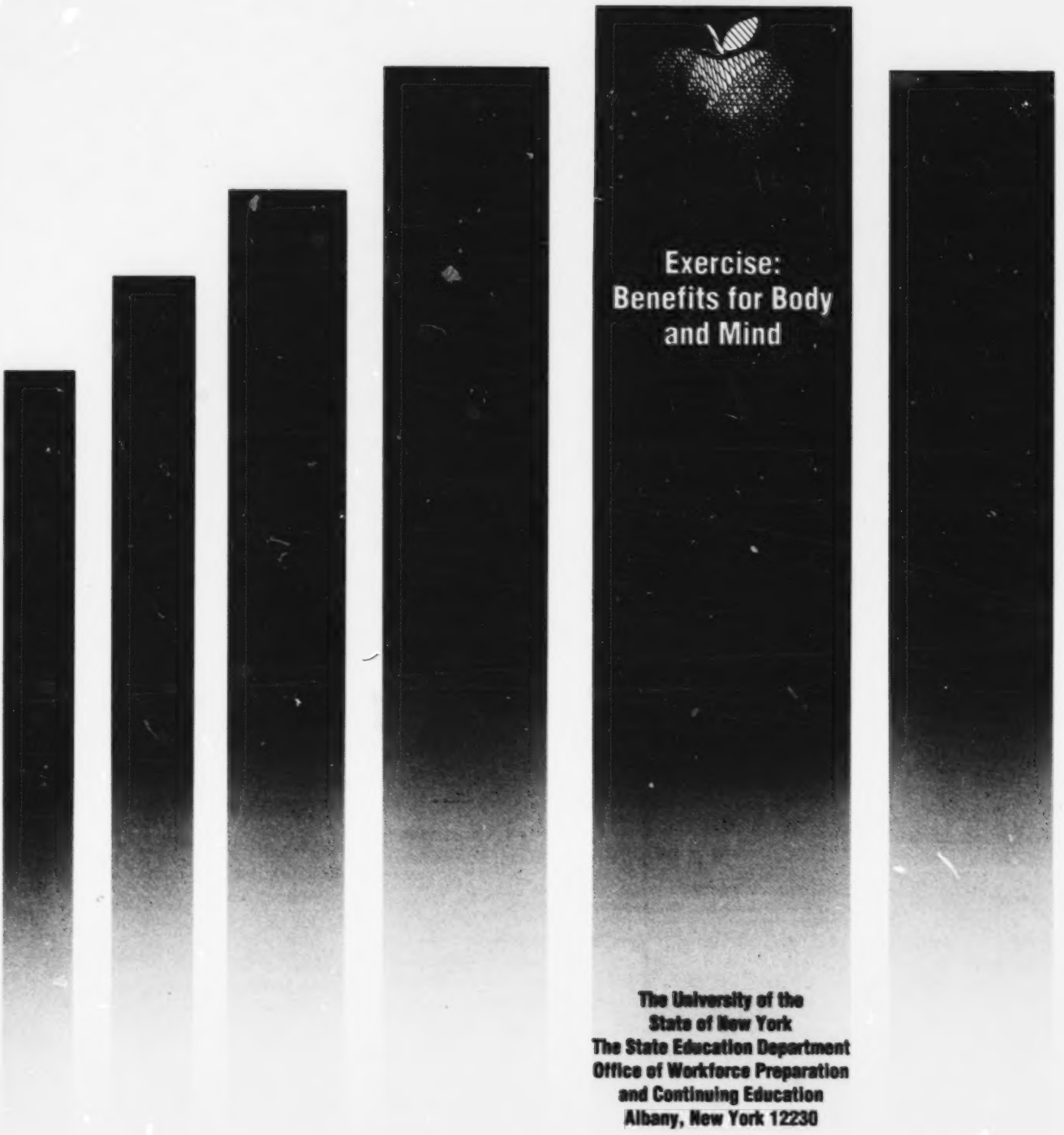

Exercise: Benefits for Body and Mind

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Further, it is recommended that students follow specified protocol given by recognized professionals when a difference is found with material in this publication and procedures obtained elsewhere.

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EXERCISE: BENEFITS FOR BODY AND MIND

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EXERCISE: BENEFITS FOR BODY AND MIND

INTRODUCTION

A recent informal survey of adults enrolled in literacy programs revealed that students want to learn about health issues as part of their regular classes. When asked about what they needed to learn, they cited exercise and physical fitness in the top five.

Consequently, the New York State Education Department funded the Hudson River Center for Program Development, Inc. to research and create a health curriculum and instructional guides. In developing the series, we knew that it must be "user friendly." You do not have to be an expert to teach this material. The guide emphasizes using media and community experts as resources, and the didactic materials can be integrated into lessons other than health. Students will be able to improve their reading, writing, and reasoning skills at the same time they are learning important facts on health-related issues.

We hope you will find this module helpful in teaching adults about exercise and physical fitness. Knowledge and application of preventive measures and healthy life-style habits become increasingly vital in our complex world.

GOALS AND OBJECTIVES

The goal of this guide is to provide adult students with information about good fitness habits and positive health behaviors which will substantially reduce the risk of poor overall health.

Upon completion of this module, students will be able to:

1. Understand the relationship between exercise and good overall health.
2. Create an appropriate exercise/wellness program for themselves.
3. Take necessary safety precautions to avoid injuries while exercising, and in the workout environment.
4. Extend the value of exercise to friends and family.
5. Utilize community resources for information and guidance.

BACKGROUND INFORMATION

Exercise and Good Overall Health

Positive health and fitness practices can lead to longer life expectancy. Regular exercise can both modify changes in our bodies brought on by age, and promote better overall **wellness**, or state of overall health in body and mind. Studies have shown that males today can expect to live 15 years longer than their counterparts in 1900, while contemporary females can expect to live 20 years longer. Furthermore, there is a 20-year difference in fitness levels between sedentary and active people. In other words, an *inactive* 45-year-old man has the same functional capacity of an *active* 65-year-old man.

In today's busy times, very few of us get enough exercise. It is estimated that fewer than 20 percent of U.S. adults get enough regular exercise to increase cardiovascular health, 40 percent exercise intermittently, and 40 percent are entirely sedentary. Some people mistakenly think they get enough exercise from activities like golf or bowling, when truthfully, we must all participate in regular, vigorous exercise such as swimming or jogging. Therefore, it is imperative that each of us develop an individualized exercise program, which we will discuss later.

Exercise can help us feel, look, and work better. Following are some specific advantages:

- Increases energy
- Helps cope with stress
- Tones muscles
- Often helps increase productivity
- Increases muscle strength
- Improves digestion
- Improves self-image
- Improves sleep
- Burns off calories
- Expands ability for physical work
- Helps heart and lungs work better
- Relieves constipation.

In addition to helping the heart and lungs work more efficiently, as mentioned above, exercise can also reduce or eliminate some risk factors for heart attacks, such as high blood pressure, smoking, diabetes, and overweight. It may also produce high levels of HDL, the "good" cholesterol in the blood, which is linked to *decreased* risk of coronary artery disease.

Additional Benefits of Exercise

In addition to making us feel more energetic, better about ourselves, and improving physical condition, exercise provides some less visible benefits. One is stress-reduction. Exercise is an effective way to "melt" tension.

Stress is how the body and mind respond to different demands from the environment or from inside us. Stress occurs under many circumstances: problems concerning a job, family, or illness, as well as a happy event such as a wedding. Stress affects everyone differently, so a stressful situation for one person is not necessarily stressful for another.

Believe it or not, there are bad *and* good types of stress. "Good stress" is called *eustress*, and can help individuals prepare for action, be more alert, and ready to respond to crisis. "Bad stress," however, is intense or prolonged, and can cause physical problems such as headaches, fatigue, high blood pressure, ulcers, neck and back pain, or heart disease. Self-destructive reactions to stress include violence, alcohol and drug abuse, reckless behavior, and depression. The best way to reduce stress is to identify the cause of it.

Obesity in Children

These days most children have two working parents. While adults are struggling to "do it all," television often becomes a babysitter: the average child watches between three and five hours each day. Combined, our hectic schedules and the popularity of television contribute to the rising incidence of obesity in America. Women with more than 30 percent body fat and men with more than 25 percent body fat are considered obese. The number of obese people has risen an average of 36 - 98 percent over the last 20 years, bringing the total number of obese Americans to 34 million. After infancy and early childhood, the earlier the onset of obesity, the more likely one will remain obese. This makes it important to encourage our children to begin exercising *now*.

FACTS:

- Almost 2/3 of the youth population fail to pass a minimum standard of physical fitness.
- The average child gets less than 15 minutes of vigorous exercise each day.
- More adults are afflicted today with life-style-related illnesses, *i.e.*, hypertension, cancer, and coronary heart disease than ever before, which may be offset by more activity in the childhood years.
- The majority of adults don't practice positive life-style behaviors dealing with exercise, nutrition, and stress management at a level sufficient to enhance well-being. By encouraging our children to be active, we may offset the chance of their becoming sedentary adults. Studies show that if we don't promote physical activity in children, they are less coordinated, have underdeveloped reflexes, and possess less confidence in their bodies. In addition, if they are ridiculed for being pudgy, the scars may last a lifetime.

We sustain our highest level of physical energy as children, and boast our lowest level of physical fear. Children don't see risks as adults do, and are therefore eager to try new activities. Ironically, adults often use physical activity as a punishment rather than as a reward. How often have we heard a coach say, "Take an extra lap," or a drill sergeant bark, "Drop and give me 10 pushups!" Thankfully, the "time out" theory is catching on, and many parents use *inactivity* as a punishment.

As the incidence of obesity in children increases, the biggest favor we can do our children is to change our outlook on exercise and set a positive example.

Aerobic vs. Anaerobic Activity

Aerobic activity requires oxygen for our bodies to produce energy needed for the activity. Aerobic activity conditions the heart and lungs because it increases the heart rate and causes us to breathe harder. Examples include swimming, brisk walking, running, jumping rope, or any other activity that "winds" you or works up a sweat. **Anaerobic** activity doesn't require extra oxygen, and does not condition the heart and lungs. Examples may be golf or bowling, as mentioned in our background information.

According to the American Heart Association,[1] exercises that improve the condition of your heart and lungs must have three key characteristics. These activities must be:

[1] Reproduced with permission
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BRISK — Must raise heart and breathing rates.

SUSTAINED — Must be done at least 15 - 30 minutes without interruption.

REGULAR — Must be repeated at least three times per week.

See **Handout C** in the back of this module for lists of activities which do, can, and cannot condition the heart and lungs.You should exercise at a level which allows you to carry on a conversation comfortably. Cardiac rehabilitation patients may need to exercise at a slower pace, dependent upon a health professional's recommendation. You should exercise often enough and long enough to condition the heart and lungs. In most cases, this means you should exercise at least three times per week for 30 minutes each session. Exercise should use 1,500 - 2,000 calories per week.

WHAT WORKS FOR YOU?

Fitness empowers our bodies to perform up to their full potential. Each person must tailor an exercise program to accommodate his/her own strengths and weaknesses, motivation, interests, and schedule. Each of us is different, and a program that suits one person isn't for everyone. In other words, "one size *doesn't* fit all."

Now that you know the difference between aerobic and anaerobic activities, let's discuss a few more basic facts about exercise before deciding what type of fitness program will work for you.

Principles of Exercise

As we outlined before, exercise should be brisk, sustained, and regular to condition the heart and lungs. In addition, it should adhere to a few other principles:

- You should gradually increase the intensity of your exercise to improve overall fitness. As the body becomes accustomed to one level of activity, go a step further to make it work harder.
- Gear your program toward the specific improvement you're looking for, but don't overdo any one part. The fitness program should include activities to develop all parts of the body.
- Vary your activities to reduce boredom and increase motivation.
- Allow your body to recover by following hard workout days with easy ones.

Components of Fitness

Many factors combine to make a person physically "fit" in every way. We've mainly been stressing the importance of exercise in conditioning the heart and lungs, which is technically called **cardiorespiratory endurance**. By building cardiorespiratory endurance, you improve your body's ability to deliver oxygen and nutrients to tissues and remove wastes. Though this is a vital part of any exercise program, your workout should also build stronger and more enduring muscles and improve flexibility. In addition, exercise should

FITNESS COMPONENT	SUGGESTED ACTIVITY	HOW OFTEN
Cardiorespiratory Endurance (heart/lungs)	Swimming Running	Three 20-minute sessions per week
Muscular Strength	Weight Lifting	Two 20-minute sessions per week
Muscular Endurance	Pushups	Three 30-minute sessions per week
Flexibility	Stretching	10 - 12 minutes

improve your **body composition** by decreasing body fat and building lean body mass, which includes muscle, bone, and vital organ tissues. See the above chart for examples of exercises which will help improve the components of fitness mentioned above.

When planning your fitness program, try making a schedule of how often, how long, and how hard you will work out. Include a factor from each of the above groups each week, plus a five-minute warm-up and five-minute cool-down session. Warm-up raises internal temperature and heart rate, prepares the body for vigorous activity, and decreases the chance for injury. Cool-down gradually slows the heart rate. You should walk and stretch for four minutes or more, until your heart rate returns to less than 100 beats per minute.

You should also decide *when* you will work out, and make a commitment to "just do it," as a popular advertisement says. Think about your personal preference, job and family responsibilities, availability of facilities, and weather when making this decision. Schedule your exercise time when there's little chance you'll have to cancel or will have low motivation. Some prefer the hour just before the evening meal because it helps to dissolve the day's tensions; others like the early morning because it can make you more alert and energetic on the job.

Tailoring the Program to Fit You

If you want to stick with an exercise program, you must select an activity that you'll enjoy. Following are some factors to consider while deliberating:

- **Health.** *Everyone* should consult with a health professional before beginning an exercise program, especially after having been sedentary for a long time. Yes, this means you, too, *especially* if one or more of the following "red flags" apply to you:[2] ***previous heart trouble or family history of coronary problems, breathlessness, high blood pressure, arthritis, or medical condition needing special attention, such as diabetes***. The health professional may recommend that you build up stamina slowly, beginning with a milder form of aerobic exercise such as brisk walking or swimming. You may move on to something more strenuous later.
- **Age.** As we age, our bodies don't bounce back from abuse as quickly as they used to. Therefore, we must treat them kindly, especially when beginning an exercise program after a long sedentary period. Your health professional will know more about your specific condition, but generally after age 40, you should build up your stamina gradually, and refrain from activities that may be too vigorous. After age 60, less strenuous aerobic activities such as walking or swimming are good choices.
- **Results.** The effects exercise will have on you depends on the activity you choose. We've mentioned the importance of conditioning the heart and lungs, and if you're interested in that, be sure to choose an aerobic activity. If you're more interested in flexibility or pure enjoyment, choose a less intense activity.
- **Company?** Having a "partner in crime" to exercise with can motivate you to show up for your workout, and support you in sticking with it. Some people, however, prefer to exercise alone, using the time to make plans or reflect. You should also consider whether your favorite activities are more individually or team-oriented.
- **Atmosphere.** Your preference in surroundings can directly affect your choice in exercise program. Although some activities may be done in- or out-of-doors, others are more limited to one or the other. For example, brisk walking may take place outside, but is often done in shopping malls or around indoor athletic tracks. Weight lifting, however, is basically confined to indoor gyms. When planning your workout, consider whether bad weather might deter you from doing it. Also, consider what will be most pleasurable, convenient, and cost-effective.
- **Money.** Many activities require expensive equipment or membership in an elaborate health club. Other activities may demand as little as a good pair of shoes. Check around your community for low-cost alternatives, then use your imagination to save money by substituting canned goods for free weights, doing body resistance exercises rather than Nautilus, and so forth.
- **Time Constraints.** You must consider when you are most comfortable exercising. If you're an early bird, get it out of the way. If you need

[2]"Exercise and Your Heart," p. 12

to blow off steam after a hectic day, go for it. If neither of those works, try it at lunchtime. Whichever time of day you choose, try to be sure it is consistently free from other commitments.

Phases of Fitness

After you begin your program, fitness won't just "happen" overnight. Like most good things, it's a result of planning, gradual work, and perseverance. The U.S. Army describes the phases leading to overall physical fitness as follows:

- **Preparatory** — conditions the cardiorespiratory and muscular systems to become accustomed to exercise. Continue at this level until there is no undue fatigue or muscle soreness.
- **Training** — increase physical load as strength and endurance increase.
- **Maintenance** — keeps fitness at level achieved in first two phases.

Weight Control

Many people are interested in weight control, and a regular program *is* important to help lose, gain, or maintain weight. However, regardless of our goals, we should understand and take advantage of the important role of regular exercise and good nutrition to accomplish overall physical fitness and health.

Overweight and overfat are *not* the same thing. Some people are more muscular, and since muscle weighs more than fat, they appear to be overweight in the scale's opinion. On the other hand, some people weigh the "average" amount, but carry too much body fat as opposed to lean body mass, as we discussed earlier. Women's bodies should be composed of 20 percent fat, while men's should be 15 percent fat. As mentioned previously, women with more than 30 percent body fat and men with more than 25 percent body fat are considered obese. Measuring body composition is a much better gauge of fitness than reading standard height-weight charts. An easy self-test is the "pinch an inch" test. If you can pinch more than an inch of body fat at the waist and abdomen, you may be overfat. Exercise can increase lean body mass and decrease fat. This can result in a loss of inches without loss of weight, since as mentioned above, muscle is heavier than fat. This fact may even mean a *gain* in weight after beginning an exercise program, although your body composition will be improved.

Maintaining your ideal weight is directly related to **energy balance**, or the amount of calories you take in each day as opposed to the amount you use up. You must learn to offset energy intake (food) with energy output (physical activity) to maintain your desired weight. If you eat more calories than your body uses in a day, the extra calories are converted to fat. If you don't take in enough calories to meet your body's energy requirements, your body will use its stored fat. Though exercise will help build muscle, don't make the mistake of thinking that fat turns into muscle. It is important to eat correctly *and* exercise to ensure that stored fat, rather than muscle, is used when weight is lost.

You should eat a wide variety of foods. Following a "well-balanced diet" doesn't really mean how much or little you eat, but how *well* you eat. It is most important to get enough calcium and vitamins A and C. Eat fruits and vegetables (fresh when possible) and don't skip meals or starve yourself. A nutrition plan high in complex carbohydrates (starches) and moderate in protein (meat) will round out an exercise program toward overall health. Cut down on fat, saturated fat, and cholesterol. Also, be sure to replace fluids lost in sweating — drink plenty of water!

Don't let your diet fall below 1,200 calories unless you are under a health professional's supervision. If you have chosen a weight reduction program, don't lose more than two pounds per week. For more nutritional information, consult the module ***Nutrition: Eating for Better Health***.

Don't look at exercise through guilt-colored glasses. We need not all be pencil-thin, only healthy. Look for opportunities to use your body and feel better: take the stairs rather than the elevator, put some vigor into your vacuuming or mopping! Small gestures add up to use a sizable amount of energy, plus improve muscle tone and flexibility. Think of it like this:

1 pound of fat = 3,500 calories

15 minutes of moderate exercise (walking one mile) will use 100 calories.

Walking one mile every day uses 700 calories each week.

If you"re consistent through all 52 weeks in a year, you could burn up 36,400 calories (10.4 pounds worth)!

Physiological Differences Between Sexes

Though we live in a world of equal opportunity, there are definite physiological differences between men and women, which lead to varying performance in exercise. Following are some interesting contrasts in physical makeup:[3]

Size

- The average male is 70.2" tall and 144.8 pounds.
- The average female is 64.4" tall and 126.6 pounds.

Muscle

- Males have about 50 percent more muscle than females.
- A female the same size as a man is usually only 80 percent as strong.

Fat

- Females' body composition is usually 10 percent more fat than males the same age.
- Men generally store fat in the back, chest, and abdomen, while women accumulate fat in the buttocks, arms, and thighs.

Bones

- Females have less bone mass, but their pelvic structure is wider, therefore keeping them from running as fast as males. However, recent studies of World Class runners show that women runners today are improving twice as rapidly as men. They project that the best woman runner's time will be within 4 - 6 percent of the best male runner's time due to differences in physical makeup, mainly body fat.[4]
- Females must overcome more resistance in activities that require lower body movement due to a lower center of gravity.

Heart and Lungs

- A female's heart is 25 percent smaller than a male's. A larger heart can move more blood with less beats, so the pulse is slower. Therefore, males are generally less likely to become fatigued as rapidly as females.
- Males have a lung capacity 25 - 30 percent greater than that of females. This gives them more of an advantage in processing oxygen.

Heat

- Women usually sweat less and evaporate less heat.
- Women have higher heart rates and a higher temperature when sweating starts, but are generally able to adapt to heat as well as men do.

Flexibility

- Women are generally more flexible than men.

Women may exercise during the menstrual period, but if it creates discomfort, they should consult a health professional. Females should always wear a properly fitted brassiere with adequate support, and as mentioned below, pregnant women shouldn't exercise without a health professional's approval.

[3]*"Fit to Win: Physical Conditioning,"* Department of the Army, 1987.

[4]National Public Radio: January 1, 1992.

SPECIAL CASES

Many of us feel intimidated about beginning an exercise program due to physical condition, age, or size. If you fall into one of the following categories, rest assured that you *can* and *should* exercise. Depending on your individual case, your health professional can recommend an appropriate program suitable *and* comfortable for you.

Pregnancy and Exercise

Most pregnant women who were physically active before becoming pregnant can remain so during their pregnancies without complications. In fact, women who are active during pregnancy show a history of fewer premature births, shorter labor, and fewer backaches. Health professionals should give pregnant women guidance for appropriate exercise programs, but it's important to know that you shouldn't perform exercise at the same levels as before you became pregnant.

Senior Citizens

Exercise is equally as important for senior citizens as for the younger generations. A physical fitness program for the elderly should focus on reduction of chronic health conditions or a natural "slowing down" of aging processes. Physical activity for older persons:

- can help prevent heart attacks by enlarging coronary arteries
- can halt osteoporosis, since exercise stimulates formation of new bone
- can help control weight as metabolism slows with age.

Although we must take better care of our bodies as they age, we shouldn't consider the later years in life a time of deterioration, but of ripening. Many activities are suitable for senior citizens, including aerobic dance. Walking is also preferred as an exercise program since it is inexpensive, easy, versatile, and less strenuous than other activities. A low-impact exercise such as yoga, which emphasizes breathing and stretching, may be a good choice, too.

Whatever the activity, it should be planned when it won't interfere with other commitments, and when it will be safe for the elderly person to be out.

Exercise for the Large Person

If you are a large person, don't let yourself be victimized by others' attitudes of prejudice and discrimination toward large people. Those opinions undermine your well-being, and often keep you from becoming more physically active and, hence, more healthy. Though our society communicates an overwhelming message that "thin is in," it really isn't true. Losing weight won't make your life perfect, and you don't need to be thin in order to exercise. Give yourself a chance to have an efficient heart, an able body, and higher self-esteem.

Choose an exercise that involves total body movement or at least use of large muscle groups. For obese people with muscle and bone problems, walking may not be a good choice. Stationary cycling, rowing, and swimming are all easy on the joints, as are water activities (excess weight is an asset in the water). A cross-country ski track, which is low intensity, uses large muscle groups and raises the heart rate without much exertion. Low-level weight training is good for maintaining or increasing lean body mass, but doesn't burn many calories.

Exercise may or may not help the large person to lose weight, but it definitely does help maintain lean body mass. Good health is the sign of success, not weight loss. Though there are many different opinions about what types of exercise large people should do, the important thing is to do *something*.

GETTING STARTED

Motivation

Though we all have the best intentions, somewhere along the line, motivation is bound to falter. The first way to counteract this is to make a commitment: decide you're going to be physically fit, be patient, don't try too much too soon, and don't quit before you have a chance to experience the rewards of fitness. Don't be discouraged; if you've been inactive for a long time, it will take awhile to get into shape. You can build up as your body becomes more fit. Also, don't compare yourself to friends or classmates. Your goal should be *physical fitness*, not competition. Yours is a unique body with unique needs and capacities, and you must develop to your own potential.

You may stay motivated by using some of the following helpful hints:

- **Set short-term and long-term goals.** If you have chosen jogging as your activity, you may have a long-term goal of entering a race, though you may set several short-term goals such as running around the block or running a certain amount of days in a row.
- **Talk with family and friends.** You'll do better with support and encouragement.
- **Stick with your chosen time slot.** As discussed in planning your program, you may prefer to walk alone in the morning to prepare for the day ahead, to squeeze it in during your lunch hour, or to unwind, relax, and reduce tension in the evening. When scheduling, consider that you shouldn't exercise for at least two hours after eating, and you should wait about 20 minutes before eating *after* exercising.[5] Whatever time you choose, make exercise a part of your routine.
- **Find a place.** If weather permits, you may enjoy walking outdoors on a smooth soft surface that doesn't intersect with traffic (if possible). You may walk indoors at a school track or recreation center, or even at a shopping mall.
- **Choose a partner.** You may certainly exercise alone, but if companionship makes it more enjoyable and helps you stick to it, find a partner who can keep the same schedule and pace as you.
- **Stick with it.** If you're having trouble, review the factors you considered when choosing this program. You may want to contemplate switching activities.

Doing It Right

Many elements factor into following a safe, healthy exercise routine. Therefore, you should pay attention to the intensity, duration, regularity, and boundaries of such a program.

Heart Rate

You should keep track of your heart rate while exercising to be sure you're not doing too much. Your heart has a limit to how much it can do, called your **maximum heart rate** or **MHR**. This figure is usually 220 minus your age, so for example: a 30-year-old's MHR would be 220 - 30, or 190 beats per minute.

To condition the heart and lungs, the American Heart Association recommends raising your heart rate to 60 - 75 percent of your MHR,[6] a level which is called the **target zone**. If you go above 75 percent or below 60 percent, you may either overwork your heart or not do enough to condition it. To find your target zone, your must figure the 60 percent and 75 percent of your MHR. Either on paper or with a calculator, multiply your MHR first by .60, then by .75. See the example for a 30-year-old below:

The MHR for a 30-year-old is 220 - 30 = 190.

190 x .60 = 114

190 x .75 = 142.5

Therfore, the target zone for a 30-year-old is 114 to 142.

As we mentioned before, you should start slowly, at 60 percent of your MHR, and comfortably work your way up to 75 percent. Once you're established in your exercise routine and comfortable at the top of your target zone, you may even climb to as much as 85 percent of your MHR, although it's not necessary.

[5] "Exercise and Your Heart," p. 24

[6] "Exercise and Your Heart," p. 18

Duration and Routine

We first discussed warm-up and cool-down under **Components of Fitness**. As mentioned previously, these sessions are to prepare your body for exercise, then let it gradually recover from your workout.

Most sources recommend five minutes for warm-up. Use the time to loosen up: stretch thoroughly, then assume your activity, gradually increasing your pace as you work toward your target zone. Once firmly established in your exercise program, work within your target zone should last 20 to 30 minutes.[7] Cool-down should also last for five minutes. You should slow your pace step-by-step, possibly with a slower version of your activity (for example, slow your run down to a brisk walk). If the exercise has been especially vigorous, stretching again is a good idea.

Many people wrongly assume they don't need warm-up and cool-down, and that the sessions are a waste of time when they could be working in their target zones. Please don't make this mistake. Remember, without warm-up or cool-down, your heart is "shocked," first with abrupt overload, then with just as sudden a stop.

Regularity

We can't stress enough the importance of exercising *regularly* in order for your body to achieve true physical fitness, and for you to realize its mental, emotional, and physically-related benefits. According to the American Heart Association, the definition of "regular" implies at least three times per week.[8]

In case of a lapse in your exercise routine, be careful not to overdo it the first day back. If you were ill, be sure you're feeling 100 percent before exercising again, so as to avoid a relapse. Whatever the case, cut back to a lower intensity and work your way back up to the top.

Boundaries

If you want to exercise more than the minimum, more power to you! There are no limits to exercise, as long as you continue to take good care of your body while working out, and respond to any warning signs. Your heart and lungs will continue to benefit from additional exercise, and you will use up more calories. Just continue to enjoy what you're doing.

Life-style Activities

In addition to fitting a safe, regular exercise program into your life, you may realize some of the cumulative effects of little bits of exercise throughout your day. Following are some ways to fit more exercise into your life-style:[9]

- Take the stairs.
- Park farther away from your destination.
- Get off the bus early.
- Mow and weed the lawn.
- Make yeast breads from scratch (kneading is hard work!).
- Walk a dog or cat.
- Wash the car.
- Plant a garden.
- Carry your groceries home.
- Plan physically active trips.
- Do errands with your children rather than sending them for you.
- Scrub the floors and windows.
- Take a walk during lunch time.
- Do calisthenics in front of the TV.
- Do leg lifts while brushing teeth.
- Stand rather than sit while waiting.
- March in place while doing laundry.
- Walk more, sit less.
- Walk, rather than call your neighbor.
- Tense abdominal muscles while driving or riding.

[7] "Exercise and Your Heart," p. 20
[8] "Exercise and Your Heart," p. 22

[9] Adapted from *Why Weight?* by Nutrition Services, Allegheny County Health Dept., Pittsburgh, PA, 1986.

How *Not* to Spend Lots of Money

In these tough economic times, no one has extra money to spend on expensive exercise equipment. Though time and money demands can be discouraging, you should still try to make exercise a top priority to work into your budget *and* your schedule.

The least expensive forms of exercise are walking or running, since the only necessary equipment is a good pair of shoes which provide ample support. Costs ranges from $30 to $50, and in some cases more, depending on your bargain-hunting skills, your budget, and your desire for name brands! Dance or other classes cost between $2 and $10 per class, depending on where you live. Low-cost classes are often held at community centers or school gymnasiums, while you may find more expensive versions at health clubs or your local "Y." Health club memberships can cost up to $500 or more per year, which can really sabotage a budget.

To keep from overspending, check with your local YMCA and YWCA to see if they offer community scholarships, and if you qualify for such a program. Also, as mentioned before, you can save money on other equipment such as weights or resistance bands simply by using your imagination. Don't, however, leave yourself open to injury by skimping on important equipment such as a helmet, protective eyewear, or inadequate shoes.

SAFETY

The purpose of exercise is defeated if we do not do it safely. Statistics show that 10 - 15 percent of adolescents are treated in emergency rooms or hospitalized due to sports-related injuries, while U.S. Army data shows that 60 percent of women and 40 percent of men are injured in aerobic exercise programs. Injuries are usually caused by too much activity too often, with a rapid increase in intensity. If you're in pain or think you might be hurt, *stop* exercising.

Prevent Injury While Exercising

The best way to prevent injuries is to keep them from happening. We've mentioned many times the importance of: consulting a health professional before beginning a program; warming up, cooling down, and not doing too much too soon; allowing your body to "recover" between intensive workouts; using proper equipment such as supportive shoes and protective eyewear; and heeding any warnings your body might be trying to give you. In addition, you should know the following to protect yourself in certain situations:

- **Feelings of pain or pressure on the left of your chest, neck, shoulder, or arm, or feelings of dizziness, cold sweat, draining of facial color, or collapse could mean that you have a heart problem.** If these warning signs appear while you're exercising and you disregard them, any condition you might have may become serious. If you experience any of these symptoms, call your health professional immediately.
- **Always protect yourself from the elements when exercising outdoors.** In warm weather, don't exercise when heat and humidity are at their worst. Early in the morning or just after sundown, if possible, is better. Also, dress lightly, and cut back on your activity level until you're used to the heat. Remember to replenish fluids lost through sweat — water is best. If you feel dizzy, light-headed, or unreasonably tired, or stop sweating, you may be experiencing heat stroke — see a health professional.
- In cold weather, dress warmly in layers. To determine the appropriate number of layers, use this general rule: dress as you would if you were outdoors but *not* exercising, and then strip off a layer. Cotton is best since it lets sweat evaporate easily. Shield your extremities with mittens, a hat, and cotton socks.
- **Care for your back in following ways:**[10]
  - Stand upright with a mild "in-curve" of the lower back and with knees slightly bent.
  - Sit with lower back curved in slightly; don't "slouch" or allow back to "round off."
  - Sleep on your side or back; try not to sleep on your stomach.
  - When lifting, keep your back relatively straight. Bend at the knees and keep objects close to your body.
  - Never bend at the waist with knees straight or bend and twist at the same time.

[10] *"Fit to Win: Physical Conditioning,"* Department of the Army, 1987

Environmental Considerations

In addition to taking precautions against weather-related injuries as specified above, we should all consider the physical environment in which we exercise. We have all heard horror stories of joggers being attacked. Use common sense to avoid dangerous situations: go out in daylight, take along a whistle, use the buddy system, and *don't* become a victim!

SPREAD THE WORD!

Now that you've begun an exercise program, it's time to let everyone know how great fitness can be! An individual's life-style habits affect family and friends. A good way to get others involved is to model a good attitude and positive behavior. Once your significant others are involved, you can be a natural support system together, planning activities with each other. Remember to:

1. Demonstrate an active, fit life-style. Set the tone for fitness.
2. Monitor and encourage family and friends to support progress toward fitness goals.
3. Reward and recognize those who reach goals.
4. Balance nutritional and energy expenditure needs with life-style.

Value of the Program: How Much Better Do You Feel?

Exercise can be fun, provide recreation, and offer opportunities for companionship. Exhilaration and emotional release are a boost to mental and physical health. Exercise:

- Builds physical fitness
- Builds self-confidence
- Enhances self-image
- Gives a more positive outlook on life.

CONCLUSION

The keys to an exercise program are **motivation** and **adherence**: you must find activities that interest you, that you enjoy, and that challenge you. People often start at too high an intensity and do too much exercise, "burning out" early. Remember to start gradually, associate with others who enjoy exercising, and by all means, **DON'T STOP!**

Sample Lesson 1: Compute Your Target Zone

Goal: To use low-level math skills to identify important components in an individual's exercise program.

Outcome Objective: The learner will compute his/her resting heart rate, maximum heart rate, and "target" heart rate for exercise.

Instructional Materials & Resources:

- *Calculation of Heart Rates* (**Handout A** included in this guide)

Activities

Activity 1 Review the various kinds of aerobic exercise. Discuss the importance of raising the heart rate during exercise. It is necessary in order to condition the heart and lungs, and to raise the metabolism for burning excess calories.

Activity 2 Pass out **Handout A**. Using yourself as an example, demonstrate the computation method and figure out your own target heart rate. Assist the students in computing their own.

Sample Lesson 2: Group Activities

Goal: To research a specific exercise, sport, or aspect of physical fitness the group would like to learn more about.

Outcome Objectives: The group will identify various benefits, risks, or dangers, and answer questions about its chosen topic.

Instructional Materials & Resources:

- *Two (or more) of a Kind* (**Handout B** included in this guide)
- *List of Aerobic vs. Anaerobic Activities* (**Handout C** included in this guide)

Activities

Activity 1 Use *Handout B* as an ice-breaker exercise and to divide students into research groups.

Activity 2 Pass out **Handout C** to groups and ask them to discuss exercises they are interested in learning more about, eventually choosing one to research.

Activity 3 For a future class session, ask each group to develop a presentation to the rest of the class which will inform other students about the various benefits, risks, or dangers, and answer questions about the topic. They should also identify appropriate warm-up and cool-down exercises. The presentation may take the form of:

a) a skit or play

b) a joint oral report

c) an audio or videotape

d) a sample exercise class

Sample Lesson 3: Around the World (?) in 80 Days

Goal: To develop a competitive spirit within the class for use as a motivational tool.

Outcome Objective: Each learner will strive to reach a group-planned goal.

Instructional Materials & Resources:

- *Five Myths About Exercise* (**Handout D** included in this guide)
- *Two Sample Exercise Programs* (**Handout E** included in this guide)
- City, national, or world map

Activities

Activity 1 Review the section on motivation in this guide. Discuss various factors in motivation, including partnership and competition. Be careful, however, to point out that competition should never make one feel inferior — it serves only as a catalyst to get going! Use **Handout D** to dispel myths about exercise.

Activity 2 Use **Handout E** to show samples of both walking and running programs with gradual buildup and short-term goals. Explain that you would like to plan a "class trip" to another place, whether it be within your city, somewhere else in this country, or an exotic place on the other side of the world. Solicit suggestions from the class and take a vote, then plot the miles to your destination on an appropriate map.

Activity 3 Develop a chart with each class member's name on it, and the weeks until your competition will end. Develop a scale system for exercise = miles. Students will then record each week how far they have walked or run, or how many hours they have exercised, and convert the exercise into miles. The instructor should adapt the scale for students with physical disabilities, determining an appropriate scale for activities they are able to take part in. All students can plot their progress weekly, and eventually, will reach the goal destination. Small prizes may be awarded to the winners.

Sample Lesson 4: Lifelong Exercise for All!

Goal: To encourage others to develop an exercise program.

Outcome Objective: The learner will design an age-appropriate activity for a friend or family member.

Instructional Materials & Resources:

- *Resources* list (included in this guide)

Activities

Activity 1 Using the *Resources* list, obtain information from various organizations such as the President's Council on Physical Fitness and Sports or the American Heart Association, and review information pertaining to exercise programs for special age groups.

Activity 2 Ask each student to choose a friend or family member (or more than one) of varying age from him- or herself, and design an activity for that person. Examples include:

a) a family competition

b) a treasure hunt

c) a puzzle (with emphasis on fitness knowledge)

Sample Lesson 5: Vocabulary

Goal: To develop a working knowledge of vocabulary terms associated with physical fitness and exercise.

Outcome Objective: The learner will match appropriate terms with definitions.

Instructional Materials & Resources:

- *Matching* (**Handout F** included in this guide)

Activities

Activity 1 After covering material included in the Teacher's Guide in class, go through the glossary to reinforce meanings of terms. Distribute **Handout F** and ask students to complete.

HANDOUT A

Calculation of Heart Rates

To find your resting heart rate (RHR), count your pulse for 60 seconds while you are completely relaxed — the best time is before you even get out of bed in the morning. To figure your maximum heart rate (MHR), subtract your age from 220. For example, if you are 25-years-old, your MHR (220 - 25) = 195 beats per minute. Since your goal is to raise your RHR to within 60 - 75 percent of your MHR, you must figure out your target heart rate (THR) zone. This can be easily done by completing the following steps:

1. Find resting heart rate (RHR) by counting pulse for 60 seconds while completely relaxed.
2. Compute maximum heart rate: **220 - [your age] = MHR.**
3. To find the range of your target heart rate (THR), multipy your maximum heart range by 60 percent. Then, multipy your maximum heart rate by 75 percent. These numbers are the range of your target heart rate:

   MHR x .60 = low end of THR.
   MHR x .75 = high end of THR.

4. Count your pulse for six seconds immediately after exercising and multiply by 10 to see if you're within the range of your target heart rate. This is easily done by tacking a zero onto the number counted.

   a. Pulse beats counted in six seconds = 16
   b. Tack on a zero
   c. Actual heart rate = 160

Here's an example:

Barbara is a 56-year-old woman whose resting heart rate is 54. After she exercises, she counts 12 beats in six seconds. Has she raised her RHR to her target heart rate range (THR)?

1. 54 (RHR)
2. 220 - 56 = 164 (MHR)
3. 164 x .60 = 98.4 (low end of THR)
   164 x .75 = 123 (high end of THR
4. a. Pulse beats in six seconds = 12
   b. Tack on a zero
   c. Actual heart rate = 120

Yes, Barbara has raised her RHR to her THR, since 120 falls between the range of 98.4 and 123.

HANDOUT B

TWO (OR MORE) OF A KIND

As people come into the room, hand out out slips of paper with exercise movements, such as the following, written on each:

Jumping Jacks	Deep Knee Bends
Alternate Toe-Touch	Run in Place

There should be equal numbers of the same phrase on slips of paper, as this is an exercise for forming small groups as well as team-building, and community-building, and getting to know one another. Be sure to ask people not to share what it is written on their slips.

1. Explain to the group that each person must actually do the activity written on his/her slip of paper as he/she moves around the room and looks for others who are doing the same thing (i.e., jumping jacks, toe-touches, etc.).

2. Eventually students will find more of their "kind" and form a small group.

HANDOUT C

AEROBIC VS. ANAEROBIC ACTIVITIES [2]

The columns below describe three types of activities and how they affect your heart.

Column A — These exercises are naturally very vigorous. They need to be done at least *20 minutes*, three times a week. Then they will condition your heart and lungs, burn off calories, and give you many other benefits.

Column B — These activities are moderately vigorous but can be excellent conditioners, if done briskly for at least *30 minutes*, three times a week. When done briskly, they give the same benefits as those activities in Column A.

Column C — These activities by nature are not vigorous or sustained. They still have certain benefits — they can be enjoyable, help improve coordination and muscle tone, and help relieve tension. However, they neither condition the heart and lungs nor burn off many calories.

A: Do Condition Heart and Lungs	B:Can Condition Heart and Lungs	C: Do Not Condition Heart and Lungs
Bicycling	Bicycling	Baseball
Brisk Walking	Downhill Skiing	Bowling
X-Country Skiing	Basketball	Football
Hiking (uphill)	Calisthenics	Golf
Ice Hockey	Field Hockey	Softball
Jogging	Handball	Volleyball
Jumping Rope	Racquetball	
Rowing	Soccer	
Running in Place	Squash	
Stationary Cycling	Swimming	
Swimming	Tennis (singles)	
	Walking	

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HANDOUT D

FIVE MYTHS ABOUT EXERCISE[1]

Myth 1. Exercising makes you tired.

As their bodies get more in shape, most people feel exercising gives them even more energy than before. Regular, brisk exercise can also help you resist fatigue and stress.

Myth 2. Exercising takes too much time.

Regular exercise does not have to take more than about 30 to 40 minutes, three times a week. Once you have established a comfortable exercise routine, exercising becomes a natural part of your life.

Myth 3. All exercises give you the same benefits.

All physical activities can give you enjoyment. But only regular, brisk, and sustained exercises such as brisk walking, jogging or swimming improve the efficiency of your heart and lungs and burn off extra calories. Other activities do not give you these benefits, although they may give you other benefits such as increased flexibility or muscle strength.

Myth 4. The older you are, the less exercise you need.

With age, we tend to become less physically active, and therefore need to make sure we are getting enough exercise. In general, middle-aged and older people benefit from regular exercise just as young people do. Age need not be a limitation. What is important, no matter what your age, is tailoring the exercise program to your own fitness level.

Myth 5. You have to be athletic to exercise.

Most brisk activities do not require any special athletic abilities. In fact, many people who found school sports difficult have discovered that these other activities are easy to do and enjoyable.

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HANDOUT E

TWO SAMPLE EXERCISE PROGRAMS[4]

A Sample Walking Program

	Warm Up	Target Zone Exercising	Cool Down	Total Time
Week 1				
Session 1	Walk slowly 5 min.	Then walk briskly 5 min.	Then walk slowly 5 min.	15 min.
Session 2	Repeat above pattern.			
Session 3	Repeat above pattern.			

Continue with at least three exercise sessions during each week of the program.

Week 2	Walk slowly 5 min.	Walk briskly 7 min.	Walk slowly 5 min.	17 min.
Week 3	Walk slowly 5 min.	Walk briskly 9 min.	Walk slowly 5 min.	19 min.
Week 4	Walk slowly 5 min.	Walk briskly 11 min.	Walk slowly 5 min	21 min.
Week 5	Walk slowly 5 min.	Walk briskly 13 min.	Walk slowly 5 min.	23 min.
Week 6	Walk slowly 5 min.	Walk briskly 15 min.	Walk slowly 5 min.	25 min.
Week 7	Walk slowly 5 min.	Walk briskly 18 min.	Walk slowly 5 min.	28 min.
Week 8	Walk slowly 5 min.	Walk briskly 20 min.	Walk slowly 5 min.	30 min.
Week 9	Walk slowly 5 min.	Walk briskly 23 min.	Walk slowly 5 min.	33 min.
Week 10	Walk slowly 5 min.	Walk briskly 26 min.	Walk slowly 5 min.	36 min.
Week 11	Walk slowly 5 min.	Walk briskly 28 min.	Walk slowly 5 min.	38 min.
Week 12	Walk slowly 5 min.	Walk briskly 30 min.	Walk slowly 5 min.	40 min.

Week 13 on: Check your pulse periodically to see if you are exercising within your target zone. As you get more in shape, try exercising within the upper range of your heart zone. Remember that your goal is to continue getting the benefits you are seeking and enjoying your activity.

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JOGGING PROGRAM (handout E cont'd.)[5]

A Sample Jogging Program

If you are over 40 and have not been active, you should not begin with a program as strenuous as jogging. Begin with the walking program instead. After completing the walking program, you can start with week 3 of the jogging program below.

	Warm Up	Target Zone Exercising	Cool Down	Total Time
Week 1				
Session 1	Stretch and limber up for 5 min.	Then walk 10 min. Try not to stop.	Then walk slowly 3 min. and stretch 2 min.	20 min.
Session 2	Repeat above pattern.			
Session 3	Repeat above pattern.			

Continue with at least three exercise sessions during each week of the program.

Week 2	Stretch and limber 5 min.	Walk 5 min., jog 1 min., walk 5 min., jog 1 min.	Walk slowly 3 min.; stretch 2 min.	22 min.
Week 3	Stretch and limber 5 min.	Walk 5 min., jog 3 min., walk 5 min., jog 3 min.	Walk slowly 3 min.; stretch 2 min.	26 min.
Week 4	Stretch and limber 5 min.	Walk 4 min., jog 5 min., walk 4 min., jog 5 min.	Walk slowly 3 min.; stretch 2 min.	28 min.
Week 5	Stretch and limber 5 min.	Walk 4 min., jog 5 min., walk 4 min., jog 5 min.	Walk slowly 3 min.; stretch 2 min.	28 min.
Week 6	Stretch and limber 5 min.	Walk 4 min., jog 6 min., walk 4 min., jog 6 min.	Walk slowly 3 min.; stretch 2 min.	30 min.
Week 7	Stretch and limber 5 min.	Walk 4 min., jog 7 min., walk 4 min., jog 7 min.	Walk slowly 3 min.; stretch 2 min.	32 min.

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JOGGING PROGRAM (handout E cont'd.)

	Warm Up	Target Zone	Cool Down Exercising	Total Time
Week 8	Stretch and limber 5 min.	Walk 4 min., jog 8 min., walk 4 min., jog 8 min.	Walk slowly 3 min.; stretch 2 min.	34 min.
Week 9	Stretch and limber 5 min.	Walk 4 min., jog 9 min., walk 4 min., jog 9 min.	Walk slowly 3 min.; stretch 2 min.	36 min.
Week 10	Stretch and limber 5 min.	Walk 4 min., jog 13 min.	Walk slowly 3 min.; stretch 2 min.	27 min.
Week 11	Stretch and limber 5 min.	Walk 4 min., jog 15 min.	Walk slowly 3 min.; stretch 2 min.	29 min.
Week 12	Stretch and limber 5 min.	Walk 4 min., jog 17 min.	Walk slowly 3 min.; stretch 2 min.	31 min.
Week 13	Stretch and limber 5 min.	Walk 2 min., jog slowly 2 min., jog 17 min.	Walk slowly 3 min.; stretch 2 min.	31 min.
Week 14	Stretch and limber 5 min.	Walk 1 min., jog slowly 3 min., jog 17 min.	Walk slowly 3 min.; stretch 2 min.	31 min.
Week 15	Stretch and limber 5 min.	Jog slowly 3 min., jog 17 min.	Walk slowly 3 min.; stretch 2 min.	30 min.

***Week 16** on: check your pulse periodically to see if you are exercising within your target zone. As you become more fit, try exercising within the upper range of your target zone. Remember that your goal is to continue getting the benefits you are seeking and enjoying your activity.*

The exercise patterns for both of the sample exercise programs are suggested guidelines. Listen to your body and build up less quickly, if needed.

Special Tips for Walking and Running

- Soften impact by walking or running on soft, even surfaces such as grass or dirt paths.
- Ease strain on feet and legs by landing on the heels, rather than the balls of feet.
- Wear light-colored clothing and face oncoming traffic to be more visible.
- Keep feet clean and toenails trimmed.
- Wear soft, absorbent socks.
- Wear high-quality footwear designed for the activity.
- Inspect feet before and after workout; treat blisters promptly.
- See a podiatrist for persistent foot problems.

HANDOUT F

MATCHING

_____1.	Wellness	a. Maximum Heart Rate
_____2.	Aerobic	b. Women with more than 30 percent body fat and men with more than 25 percent body fat.
_____3.	HDL	c. Ability to deliver oxygen and nutrients to tissues and remove wastes over a long period of time
_____4.	Obese	d. "Good" protein-carrying cholesterol in blood
_____5.	Fitness	e. Consists of two major elements: body fat and lean body mass
_____6.	MHR	f. The amount of calories you take in and use up during the day
_____7.	Cardiorespiratory Endurance	g. Equal to one pound of fat
_____8.	Body Composition	h. Increase physical load as strength and endurance increase
_____9.	Training	i. Activity which increases the heart rate to a training range and is sustained for 20 minutes or more
_____10.	Energy Balance	j. Should be approximately 60-75 percent of your Maximum Heart Rate (MHR)
_____11.	3,500 unused calories	k. The state of overall health in body and mind
_____12.	Target Zone	l. The condition of being in good physical shape

RESOURCES

American Heart Association
National Center
7320 Greenville Avenue
Dallas, TX 75231
(or contact your local chapter)

American Running and Fitness Association
9310 Old Georgetown Road
Bethesda, MD 20814
(800) 776-ARFA

Area Health Education Center Program
College of Osteopathic Medicine
University of New England
Hills Beach Road
Biddeford, ME 04005-9599
(207) 283-0171

attrACTIVE WOMAN
Marvel Harrison, M.S., R.D.
Catharine Stewart-Roache, D. Min., M.A.
Parkside Publishing Corporation, 1989
205 West Touhy Avenue
Park Ridge, IL 60068

Fit to Win: Physical Conditioning
Fit to Win: Stress Management
Department of the Army, 1987
Washington, DC
(or contact your local Army Reserve Center)

Great Shape - The First Exercise Guide for Large Women
Pat Lyons, R.N.
Debby Burgard
Arbor House - William Morrow, 1988
Madison Avenue
New York, NY 10016

National Association of Governors' Councils on Physical Fitness and Sports
Pan Am Plaza, 201 South Capitol Avenue
Indianapolis, IN 46225
(317) 237-5630

National Fitness Leaders Association
14800 Conference Center Drive, Suite 401
Chantilly, Virginia 22021
(703) 222-2520

National Recreation and Park Association
3101 Park Center Drive
Alexandria, VA 22302
(703) 820-4940

President's Challenge
Poplars Research Center
400 East 7th Street
Bloomington, IN 47405

President's Council on Physical Fitness and Sports
450 5th Street, NW, Room 7103
Washington, DC 20001
(202) 272-3430

Young Men's Christian Association (YMCA)
Young Women's Christian Association (YWCA)
(consult your telephone directory for your local center)

GLOSSARY

Adherence	the act of remaining devoted to and supportive of something
Aerobic	designating or involving exercise, such as running or swimming, that conditions the heart and lungs by increasing the efficiency of oxygen intake by the body
Anaerobic	exercise which does not require excess oxygen intake by the body
Anxiety	a state of being uneasy, apprehensive, or worried about what may happen
Calorie	an amount of food able to produce energy
Cardiovascular	of the heart and the blood vessels as a unified body system
Chronic	lasting a long time or recurring often
Condition	to bring into a proper or desired state of being; to cause to become accustomed to something (i.e., the heart and lungs are *conditioned* to exercise)
Depression	an emotional condition characterized by feelings of hopelessness, inadequacy, etc.
Endurance	ability to last, continue, or remain under pain, distress, fatigue, etc.
Exertion	active use of strength, power, etc.; exercise
Fatigue	physical or mental exhaustion; weariness
Fitness	the condition of being fit; suitability, appropriateness, healthiness, etc.
Flexible	able to bend without breaking; not stiff or rigid; easily bent; pliant
Hypertension	abnormally high blood pressure
Increment	an increase, usually small, often one of a series
Intensity	degree or extent; relative strength, magnitude, vigor, etc.
Metabolism	the rate at which the body uses energy
Motivation	some inner drive, impulse, or intention that causes a person to do something; incentive; goal
Obese	20 percent or more above desired weight
Osteoporosis	a condition of fragile bones that often occurs later in life
Perseverance	the act of continuing with patient effort
Posture	the position or carriage of the body in standing or sitting
Pulmonary	of, like, or affecting the lungs
Resistance Bands	large elastic bands used in exercise to provide resistance; often used in place of weights
Sedentary	of or marked by much sitting about and little physical movement

Stamina	resistance to fatigue, illness, hardship, etc.; endurance
Stress	mental or physical tension or strain
Trauma	a painful emotional experience, or shock, often producing a lasting effect
Vigorous	forceful or powerful; strong; energetic
Wellness	the state of being in good health and good overall mental and physical condition

Key to Handout F

1. k
2. i
3. d
4. b
5. l
6. a
7. c
8. e
9. h
10. f
11. g
12. j

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